NON-PUBLIC?: N
ACCESSION #: 9208210096
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Peach Bottom Atomic Power Station PAGE: 1 OF 03
Unit 2 and 3

DOCKET NUMBER: 05000277

TITLE: Unit 2 Reactor Scram and Unit 3 Isolations Following Several Lightning Strikes
EVENT DATE: 07/17/92 LER #: 92-012-00 REPORT DATE: 08/17/92

OTHER FACILITIES INVOLVED: Peach Bottom Unit 3 DOCKET NO: 05000278

OPERATING MODE: N POWER LEVEL: 095

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Albert A. Fulvio, Regulatory Supervisor TELEPHONE: (717) 456-7014

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On 7/17/92 at 1903 hours, a reactor scram occurred on Unit 2 when the Main Generator output breaker tripped open and caused a Main Generator power load unbalance trip signal. This trip signal occurred during a severe thunder storm. Primary Containment Isolation System Group II/III isolations occurred as expected due to the reactor water level decrease after the scram. The cause of the scram has been determined to be a lightning strike. The scram and isolations were reset and systems were returned to normal. No actual safety consequences occurred as a result of this event. Four previous similar LERs have been identified.

END OF ABSTRACT

Requirements for the Report

This report is submitted to satisfy the requirements of 10 CFR 50.73(a)(2)(iv) because of an unplanned Engineered Safety Feature Actuations.

Unit Conditions at Time of Event

Unit 2 was in the RUN mode at 95% of rated thermal reactor (EIIS:RPV) power and Unit 3 was in the SHUTDOWN mode. There were no systems, structures, or components that were inoperable that contributed to the event.

Description of Event

On 7/17/92 at approximately 1850 hours, severe thunderstorms and lightning passed through the Peach Bottom area. At 1858 hours, the #3 Startup feed was lost when its breaker (3435) (EIIS:BKR) tripped open. Loss of the #3 Startup feed resulted in Unit 3 Primary Containment Isolation System (PCIS) (EIIS:JM) Group II/III isolations during the 4KV Bus fast transfers.

At 1903 hours, a reactor scram occurred on Unit 2 when the Main Generator (EIIS:GEN) output breakers tripped open and caused a Main Generator power load unbalance trip signal. This trip signal occurred during a severe thunder storm. PCIS Group II/III isolations occurred as expected due to the Reactor water level dropped below O" as a result of void collapse upon insertion of the control rods. At this time both Unit 2 Electro Hydraulic Control (EHC) (EIIS:TG) pumps tripped and caused a loss of the EHC system. Six Main Steam Relief Valves (EIIS:RV) lifted and the Alternate Rod Insertion (ARI) system actuated as Reactor pressure increased. The Reactor Core isolation Cooling system (EIIS:BN) was used to control Reactor level and pressure. Subsequently, Reactor Feed Pumps (EIIS:SK) were returned to service for level control. The NRC was notified of the event via ENS on 7/17/92 at 2230 hours. The scram actuation and PCIS Group II/III isolations were reset.

Cause of Event

The cause of the 3435 breaker to trip open is still indeterminate. No alarms were received and later inspections showed no breaker trip flags. A lightning strike is likely to have caused the event but an investigation is being conducted.

It has been determined that a lightning strike caused relay chatter in

the Main Generator protection relay circuit which tripped open the Unit 2 Main Generator output breakers.

Both Unit 2 EHC pumps were lost during the Unit 2 scram. The pumps are normally supplied from two different sources. Due to maintenance activities on the 1R4 transformer, the 2A EHC pump was crosstied to the 2R4 transformer which had both pumps connected to the same power supply. When the #3 Startup feed was lost in conjunction with a Main Generator Lockout, both the 1R4 and 2R4 bus voltages were lost simultaneously. Loss of both EHC PUMPS caused a loss of EHC control pressure and the EHC system.

Analysis of Event

No actual safety consequences occurred as a result of this event. All isolations, initiations, and transfers functioned as designed.

Corrective Action

Following the event, the scram and isolations were reset and the affected systems were restored to normal.

The system is currently being monitored to investigate for operating anomalies in the 3435 breaker control circuit. The remote function of the control circuit has been temporarily disabled. The design purpose of the Main Generator protection relays will be evaluated. These protective relays were verified to be functional after the event. Any significant additional causes or corrective actions will be submitted in a revision to this report as necessary.

A Task Force has been established to evaluate the existing configuration to minimize the adverse effects of Substation lightning strikes.

1R4 transformer maintenance has been completed and the Unit 2 EHC pumps have been restored to their normal configuration. The EHC pumps are connected to different sources.

Previous Similar Events

Four previous similar LERs have been identified involving lightning strikes. LER 3-85-18 and LER 3-91-10 addressed reactor scrams with Group II & III isolations. LER 2-87-12 and LER 2-90-27 addressed various PCIS isolations. As a result of all four events, the corrective actions taken involved resetting the appropriate isolations or performing specific work

on individual pieces of equipment. Therefore, the corrective actions in the previous events could not have been expected to prevent this event.

ATTACHMENT 1 TO 9208210096 PAGE 1 OF 1

CCN 92-14102

PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM ATOMIC POWER STATION
R. D. 1, Box 208
DELTA, PA 17314
(717) 456-7014

KEN POWERS
PLANT MANAGER
August 17, 1992

Docket No. 50-277
50-278

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Licensee Event Report
Peach Bottom Atomic Power Station - Unit 2 and 3

This LER concerns a Unit 2 reactor scram and Unit 3 isolations following several lightning strikes.

Reference: Docket No. 50-277
50-278
Report Number: 2-92-012
Revision Number: 00
Event Date: 07/17/92
Report Date: 08/17/92
Facility: Peach Bottom Atomic Power Station
RD 1, Box 208, Delta, PA 17314

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Sincerely,

cc: J. J. Lyash, USNRC Senior Resident Inspector
T. T. Martin, USNRC, Region I

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